



April 9, 2021

Utah Department of Environmental Quality
Division of Environmental Response and Remediation
195 North 1950 West
PO Box 144840
Salt Lake City, Utah 84114-4840

Attn: Mr. Kevin Beery
P: 801.536.4214
E: kbeery@utah.gov

**RE: Sub-Slab Soil Gas Sampling, First Quarter 2021
Triple Stop Chevron
1034 West Gentile Street, Layton, Utah
Facility ID No. 3000500, Release Site NUB
Terracon Project No. 61197153**

Dear Mr. Beery:

As requested, Terracon Consultants, Inc. (Terracon) is pleased to provide the attached report summarizing sub-slab soil gas sampling and analyses at homes in the Angel Crossing residential subdivision (Workplan NUB-11) pertaining to the reported Triple Stop Chevron underground storage tank petroleum release.

1.0 INTRODUCTION

On February 14, 2019, Layton City reported petroleum odors in the basement of a home near the intersection of Gentile and Angel Streets. This prompted an investigation initiated by the Utah Department of Environmental Quality (UDEQ). On February 16, 2019 two other homeowners reported gasoline vapors in their basements. Vapor mitigation systems were installed within three of the residences under the direction of ATC Associates. The three vapor mitigation systems have since been replaced with properly designed sub-slab depressurization systems (SSDS) in the initial three residences and also installed in three additional homes. As a secondary mitigation measure, five IQ Air Multi Gas air filtration units are operating within the basements of the homes with an operating SSDS.

2.0 SUB-SLAB SOIL GAS SAMPLING

Sub-slab soil gas samples were collected from the six residences in the Angel Crossing Subdivision on March 18 and 19, 2021, in laboratory-supplied, 400-mL to 1L Summa® canisters, using new Teflon® tubing and a flow regulator that restricts flow to approximately 200-mL per minute. Additionally, a soil gas sample was also collected at the residence located on the 300



Terracon Consultants Inc. 6949 South High Tech Drive Midvale, Utah 84047

P 801-545-8500 terracon.com

Environmental



Facilities



Geotechnical



Materials

block of South Angel Street (Lab Sample ID SSVMP-7) from a vapor pin that was installed by others in early 2019.

Prior to sub-slab soil gas sample collection, a digital manometer was used to measure sub-slab vacuum induced by the operating SSDS. **Table 2** presents the vacuum measurements collected and **Exhibit 1** shows the location of the sampling points within the homes. In general, the sub-slab vacuums during the March 2021 sampling event ranged from 0.000 to 0.302 inches of water. Vacuums measured in SSVMP 2B, 4B, and 6B were below the recommended vacuum of 0.016 inches of water by the EPA.

Once the sub-slab vacuum was measured, Terracon conducted leak detection tests at each sample location. The first method was to conduct a shut-in test on the sample train after it was fully assembled. The shut-in test was conducted by closing the valve to the sub-slab vapor point and applying a vacuum to the closed sample train while monitoring the vacuum on an inline vacuum gauge for 1 minute. If the sample train held a constant vacuum, the sample train was deemed to be airtight. Following the shut-in test, the air that was evacuated from the sample train to generate the vacuum was purged.

Following the shut-in leak detection test, the sample line was purged of approximately three volumes, allowing residual air within the sample train or sample tubing to be evacuated from the sample line by attaching an extraction syringe or peristaltic pump to the purge line, opening the valves to the sample train, and removing three sample volumes of gas at a rate of approximately 0.1 liter per minute.

Once the sample line was purged, Terracon closed the purge line valve and placed a vapor shroud over the sample train and the Summa[®] canister, and introduced a tracer gas (helium). Use of helium as the tracer gas requires the use of a helium detector allowing real time monitoring of the sampling process for any leaks.

The Summa[®] canister vacuums were recorded before sample collection, post sample collection, and after receipt at the laboratory. The Summa[®] canister samples were submitted to H&P Mobile Geochemistry, Inc., a National Environmental Laboratory Accreditation Program (NELAP)-certified laboratory for analyses of VOCs, using EPA Method TO-15.

Table 1 presents the results for the soil gas samples collected. Results from the sampling event show the vapor concentrations below the basement floor slabs are less than the State of Utah Division of Environmental Response and Remediation (DERR) Risk-Based Corrective Action (RBCA) Sub-Slab Soil Gas Screening Levels.

3.0 CONCLUSION

As stated above, results from the sampling event show the vapor concentrations below the basement floor slabs of the residences are less than the State of Utah DERR RBCA Sub-Slab Soil Gas Screening Levels. .

It is noted that the sub-slab vacuum measured at three of the secondary installed vapor pins are below the EPA recommended vacuum of 0.016 inch of water. Despite not meeting the EPA recommended vacuum in the second vapor pin of SSVMP-2B, 4B and 6B, the SSDS systems are operating and creating a vacuum underneath the basement floor slabs. Based on the results of the sub-slab soil gas analytical sampling event, the potential vapor intrusion hazard for the residences is low.

If you have any questions regarding this submittal, please contact us at (801) 545-8500.

Sincerely,

Terracon Consultants, Inc.



Curt Stripeika

Senior Project Manager

UST Certified Consultant #CC0003



Robert J. Roth, P.E.

Senior Engineer

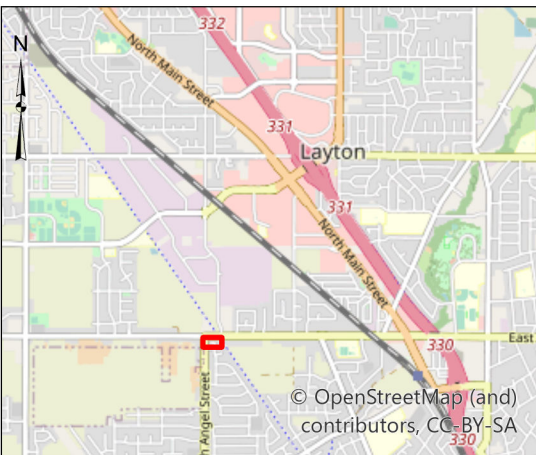
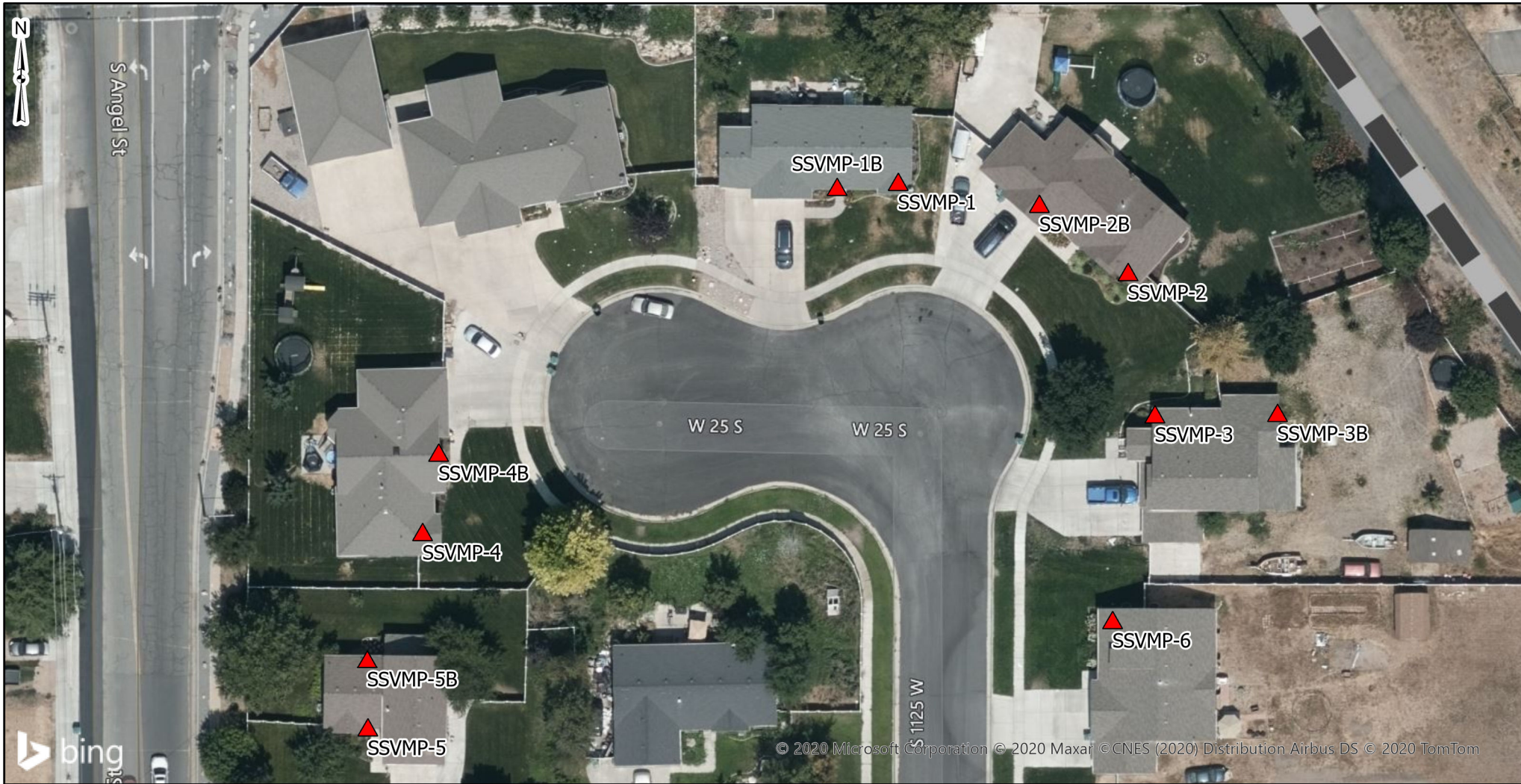


Benjamin B. Bowers

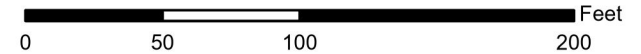
UST Certified Consultant #CC0195

Attachments; Exhibit 1, Table 1 & 2, and Laboratory analytical data

Exhibit



▲ Sub-Slab Vapor Monitoring Point



DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap

Project No.:
61197153
Date:
Jan 2021
Drawn By:
AST
Reviewed By:
CAS

Terracon
6949 S High Tech Dr, Ste 100 Midvale, UT 84047
PH. (801) 545-8500 terracon.com

Residence Sub-Slab Vapor Monitoring Points

TSC - Layton Chevron
Triple Stop Chevron Inc.
1034 West Gentile Street
Layton, UT 84041

Exhibit

1

Tables

Table 1
Sub-Slab Soil Gas Sample Analytical Results
Triple Stop Chevron - 1034 West Gentile Street Layton, Utah
Facility ID No. 3000500, Release Site NUB

Method			EPA Method TO-15											
Analyte			MTBE	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Naphthalene	TPHv (C6 - C10)	TPHv (C6) Aliphatics	TPHv (C7 - C8) aliphatics	TPHv (C9 - C10) aliphatics	TPHv (C9 - C10) alkyl benzenes
Units			ug/m ³											
Utah RBCA sub-slab soil gas screening levels	Residential		104,333	9.8	174,000	35,333	3,533		105	NA	7,300	7,300	35,333	7,300
	Commercial		146,000	16.4	243,667	49,333	4,933		146	NA	10,233	10,233	49,333	10,233
Sample ID	Date	Lab ID	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
SSVMP-6														
SSVMP6	3/16/2020	E003069-01	<18	<3.2	5.8	<4.4	<8.8	<4.4	<5.3	<100	<100	<100	<100	<100
SSVMP6	7/8/2020	E007042-05	NA	9.4	31	<4.4	11	<4.4	<5.3	180	130	<100	<100	<100
SSVMP6	11/4/2020	E011051-01	NA	6.6	35	1.9	12	2.6	<2.1	170	170	<100	<100	<100
SSVMP6B	3/18/2021	E103077-04	NA	<3.2	4.9	<4.4	<8.8	<4.4	<5.3	<100	<100	<100	<100	<100
SSVMP-1														
SSVMP1	3/5/2020	E003070-03	<18	<3.2	4.1	<4.4	<8.8	<4.4	<5.3	<100	<100	<100	<100	<100
SSVMP1	6/22/2020	E007042-01	NA	<3.2	4.2	<4.4	<8.8	<4.4	<5.3	330	110	<100	220	<100
SSVMP1	11/4/2020	E011051-05	NA	<0.6	<3.1	<1.8	2.1	<1.8	<2.1	<100	<100	<100	<100	<100
SSVMP1B	3/18/2021	E103077-02	NA	<3.2	6.9	<4.4	<8.8	<4.4	<5.3	<100	<100	<100	<100	<100
SSVMP-5														
SSVMP5	3/16/2020	E003069-02	<18	<3.2	3.8	<4.4	<8.8	<4.4	NA	<100	<100	<100	<100	<100
SSVMP5	7/8/2020	E007042-04	NA	3.9	22	<4.4	11	<4.4	<5.3	<100	<100	<100	<100	<100
SSVMP5	11/4/2020	E011051-02	NA	6.3	29	4.0	21	5.6	<2.1	280	280	<100	<100	<100
SSVMP5B	3/19/2021	E103077-06	NA	<3.2	7.6	<4.4	<8.8	<4.4	<5.3	<100	<100	<100	<100	<100
SSVMP-3														
SSVMP3	3/5/2020	E003070-01	<18	<3.2	5.8	<4.4	<8.8	<4.4	NA	170	<100	<100	170	<100
SSVMP3	7/8/2020	E007042-06	NA	6.1	18	<4.4	<8.8	<4.4	<5.3	<100	<100	<100	<100	<100
SSVMP3	11/4/2020	E011051-04	NA	2.1	12	<1.8	8.1	2.0	<2.1	<100	<100	<100	<100	<100
SSVMP3B	3/18/2021	E103077-03	NA	<3.2	4.7	<4.4	<8.8	<4.4	<5.3	<100	<100	<100	<100	<100
SSVMP-2														
SSVMP2	3/5/2020	E003070-02	<18	<3.2	5.0	<4.4	<8.8	<4.4	NA	<100	<100	<100	<100	<100
SSVMP2	6/23/2020	E007042-02	NA	7.7	32	<4.4	15	4.7	<5.3	250	190	<100	<100	<100
SSVMP2	12/18/2020	E012077-01	NA	6.2	21	15	36	6.7	<5.3	190	110	<100	<100	<100
SSVMP2B	3/19/2021	E103077-07	NA	<3.2	14	<4.4	11	<4.4	<5.3	<100	<100	<100	<100	<100
SSVMP-4														
SSVMP4	7/8/2020	E007042-03	NA	<3.2	3.9	<4.4	<8.8	<4.4	<5.3	<100	<100	<100	<100	<100
SSVMP4	11/4/2020	E011051-03	NA	<0.6	<3.1	<1.8	<1.8	<1.8	<2.1	<100	<100	<100	<100	<100
SSVMP4B	3/19/2021	E103077-05	NA	<3.2	<3.8	<4.4	<8.8	<4.4	<5.3	<100	<100	<100	<100	<100
SSVMP-7														
SSVMP7	3/18/2021	E103077-01	NA	<3.2	7.7	<4.4	<8.8	<4.4	<5.3	<100	<100	<100	<100	<100

Notes: **NA - Not analyzed**
All samples analyzed by H&P by EPA Method TO-15, Utah Modified

Table 2
Sub-Slab Vacuum Results
Triple Stop Chevron - 1034 West Gentile Street Layton, Utah
Facility ID No. 3000500, Release Site NUB

SSVMP	Date	Vacuum (in H2O)
SSVMP-6		
SSVMP6	3/16/2020	-
SSVMP6	7/8/2020	0.076
SSVMP6	11/4/2020	0.077
SSVMP6B	3/18/2021	0.003
SSVMP-1		
SSVMP1	3/5/2020	0.000
SSVMP1	6/22/2020	0.025
SSVMP1	11/4/2020	0.014
SSVMP1B	12/18/2020	0.156
SSVMP1B	3/18/2021	0.157
SSVMP-5		
SSVMP5	3/16/2020	-
SSVMP5	7/8/2020	0.210
SSVMP5	11/4/2020	0.247
SSVMP5	12/18/2020	0.713
SSVMP5	3/19/2021	0.224
SSVMP5B	12/18/2020	0.071
SSVMP5B	3/19/2021	0.302
SSVMP-3		
SSVMP3	3/5/2020	0.003
SSVMP3	7/8/2020	0.289
SSVMP3	11/4/2020	0.301
SSVMP3	12/18/2020	0.266
SSVMP3B	12/18/2020	0.028
SSVMP3B	3/18/2021	0.028
SSVMP-2		
SSVMP2	3/5/2020	0.007
SSVMP2	6/22/2020	0.025
SSVMP2	12/18/2020	0.004
SSVMP2	1/19/2021	0.057
SSVMP2	3/19/2021	0.055
SSVMP2B	12/18/2020	0.001
SSVMP2B	1/19/2021	0.008
SSVMP2B	3/19/2021	0.000
SSVMP-4		
SSVMP4	7/8/2020	0.007
SSVMP4	9/22/2020	0.019
SSVMP4	11/4/2020	0.014
SSVMP4	12/18/2020	0.011
SSVMP4	3/18/2021	0.011
SSVMP4B	3/18/2021	0.000

Note: SSVMP B denotes second vapor pin installed in home

Laboratory Analytical Data

02 April 2021

Curt Stripeika
Terracon Consultants - UT
6949 South High Tech Drive
Midvale, UT 84047

H&P Project: TER032321-18
Client Project: 61197153 / Layton, Utah

Dear Curt Stripeika:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 23-Mar-21 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody
- Sampling Logs (if applicable)

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,



Lisa Eminhizer
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP and the National Environmental Laboratory Accreditation Conference (NELAC) for the fields of proficiency and analytes listed on those certificates. H&P is approved as an Environmental Testing Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs for the fields of proficiency and analytes included in the certification process and to the extent offered by the accreditation agency. Unless otherwise noted, accreditation certificate numbers, expiration of certificates, and scope of accreditation can be found at: www.handpmg.com/about/certifications. Fields of services and analytes contained in this report that are not listed on the certificates should be considered uncertified or unavailable for certification.



Terracon Consultants - UT
6949 South High Tech Drive
Midvale, UT 84047

Project: TER032321-18
Project Number: 61197153 / Layton, Utah
Project Manager: Curt Stripeika

Reported:
02-Apr-21 11:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SSVMP-7	E103077-01	Vapor	18-Mar-21	23-Mar-21
SSVMP-1B	E103077-02	Vapor	18-Mar-21	23-Mar-21
SSVMP-3B	E103077-03	Vapor	18-Mar-21	23-Mar-21
SSVMP-6B	E103077-04	Vapor	18-Mar-21	23-Mar-21
SSVMP-4B	E103077-05	Vapor	19-Mar-21	23-Mar-21
SSVMP-5B	E103077-06	Vapor	19-Mar-21	23-Mar-21
SSVMP-2B	E103077-07	Vapor	19-Mar-21	23-Mar-21

Terracon Consultants - UT
6949 South High Tech Drive
Midvale, UT 84047

Project: TER032321-18
Project Number: 61197153 / Layton, Utah
Project Manager: Curt Stripeika

Reported:
02-Apr-21 11:37

DETECTIONS SUMMARY

Sample ID: **SSVMP-7**

Laboratory ID: **E103077-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
Toluene	7.7	3.8	ug/m3	EPA TO-15	

Sample ID: **SSVMP-1B**

Laboratory ID: **E103077-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
Toluene	6.9	3.8	ug/m3	EPA TO-15	

Sample ID: **SSVMP-3B**

Laboratory ID: **E103077-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
Toluene	4.7	3.8	ug/m3	EPA TO-15	

Sample ID: **SSVMP-6B**

Laboratory ID: **E103077-04**

Analyte	Result	Reporting Limit	Units	Method	Notes
Toluene	4.9	3.8	ug/m3	EPA TO-15	

Sample ID: **SSVMP-4B**

Laboratory ID: **E103077-05**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **SSVMP-5B**

Laboratory ID: **E103077-06**

Analyte	Result	Reporting Limit	Units	Method	Notes
Toluene	7.6	3.8	ug/m3	EPA TO-15	

Sample ID: **SSVMP-2B**

Laboratory ID: **E103077-07**

Analyte	Result	Reporting Limit	Units	Method	Notes
Toluene	14	3.8	ug/m3	EPA TO-15	
m,p-Xylene	11	8.8	ug/m3	EPA TO-15	

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Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SSVMP-7 (E103077-01) Vapor Sampled: 18-Mar-21 Received: 23-Mar-21									
Benzene	ND	3.2	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	EPA TO-15	
Toluene	7.7	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>									
		87.8 %	76-134		"	"	"	"	
<i>Surrogate: Toluene-d8</i>									
		114 %	78-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		107 %	77-127		"	"	"	"	
SSVMP-1B (E103077-02) Vapor Sampled: 18-Mar-21 Received: 23-Mar-21									
Benzene	ND	3.2	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	EPA TO-15	
Toluene	6.9	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>									
		89.8 %	76-134		"	"	"	"	
<i>Surrogate: Toluene-d8</i>									
		113 %	78-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		106 %	77-127		"	"	"	"	
SSVMP-3B (E103077-03) Vapor Sampled: 18-Mar-21 Received: 23-Mar-21									
Benzene	ND	3.2	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	EPA TO-15	
Toluene	4.7	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>									
		88.0 %	76-134		"	"	"	"	
<i>Surrogate: Toluene-d8</i>									
		114 %	78-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		107 %	77-127		"	"	"	"	

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Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SSVMP-6B (E103077-04) Vapor Sampled: 18-Mar-21 Received: 23-Mar-21									
Benzene	ND	3.2	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	EPA TO-15	
Toluene	4.9	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>									
		87.4 %	76-134		"	"	"	"	
<i>Surrogate: Toluene-d8</i>									
		112 %	78-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		108 %	77-127		"	"	"	"	
SSVMP-4B (E103077-05) Vapor Sampled: 19-Mar-21 Received: 23-Mar-21									
Benzene	ND	3.2	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	EPA TO-15	
Toluene	ND	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>									
		88.1 %	76-134		"	"	"	"	
<i>Surrogate: Toluene-d8</i>									
		113 %	78-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		103 %	77-127		"	"	"	"	
SSVMP-5B (E103077-06) Vapor Sampled: 19-Mar-21 Received: 23-Mar-21									
Benzene	ND	3.2	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	EPA TO-15	
Toluene	7.6	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>									
		89.0 %	76-134		"	"	"	"	
<i>Surrogate: Toluene-d8</i>									
		111 %	78-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		103 %	77-127		"	"	"	"	

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Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SSVMP-2B (E103077-07) Vapor Sampled: 19-Mar-21 Received: 23-Mar-21									
Benzene	ND	3.2	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	EPA TO-15	
Toluene	14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	11	8.8	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		87.7 %	76-134		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		112 %	78-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		104 %	77-127		"	"	"	"	

Terracon Consultants - UT
6949 South High Tech Drive
Midvale, UT 84047

Project: TER032321-18
Project Number: 61197153 / Layton, Utah
Project Manager: Curt Stripeika

Reported:
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Petroleum Hydrocarbon Analysis by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SSVMP-7 (E103077-01) Vapor Sampled: 18-Mar-21 Received: 23-Mar-21									
TPHv (C6 - C10)	ND	100	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	Utah APH	
TPHv (C6) Aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C7 - C8) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) alkyl benzenes	ND	100	"	"	"	"	"	"	
SSVMP-1B (E103077-02) Vapor Sampled: 18-Mar-21 Received: 23-Mar-21									
TPHv (C6 - C10)	ND	100	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	Utah APH	
TPHv (C6) Aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C7 - C8) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) alkyl benzenes	ND	100	"	"	"	"	"	"	
SSVMP-3B (E103077-03) Vapor Sampled: 18-Mar-21 Received: 23-Mar-21									
TPHv (C6 - C10)	ND	100	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	Utah APH	
TPHv (C6) Aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C7 - C8) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) alkyl benzenes	ND	100	"	"	"	"	"	"	
SSVMP-6B (E103077-04) Vapor Sampled: 18-Mar-21 Received: 23-Mar-21									
TPHv (C6 - C10)	ND	100	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	Utah APH	
TPHv (C6) Aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C7 - C8) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) alkyl benzenes	ND	100	"	"	"	"	"	"	

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Petroleum Hydrocarbon Analysis by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SSVMP-4B (E103077-05) Vapor Sampled: 19-Mar-21 Received: 23-Mar-21									
TPHv (C6 - C10)	ND	100	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	Utah APH	
TPHv (C6) Aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C7 - C8) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) alkyl benzenes	ND	100	"	"	"	"	"	"	
SSVMP-5B (E103077-06) Vapor Sampled: 19-Mar-21 Received: 23-Mar-21									
TPHv (C6 - C10)	ND	100	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	Utah APH	
TPHv (C6) Aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C7 - C8) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) alkyl benzenes	ND	100	"	"	"	"	"	"	
SSVMP-2B (E103077-07) Vapor Sampled: 19-Mar-21 Received: 23-Mar-21									
TPHv (C6 - C10)	ND	100	ug/m3	1	EC13110	31-Mar-21	31-Mar-21	Utah APH	
TPHv (C6) Aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C7 - C8) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) aliphatics	ND	100	"	"	"	"	"	"	
TPHv (C9 - C10) alkyl benzenes	ND	100	"	"	"	"	"	"	

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Volatile Organic Compounds by EPA TO-15 - Quality Control
H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EC13110 - TO-15

Blank (EC13110-BLK1)

Prepared & Analyzed: 31-Mar-21

Benzene	ND	3.2	ug/m3							
Toluene	ND	3.8	"							
Ethylbenzene	ND	4.4	"							
m,p-Xylene	ND	8.8	"							
o-Xylene	ND	4.4	"							
Naphthalene	ND	5.3	"							

Surrogate: 1,2-Dichloroethane-d4	36.3		"	42.7		85.0	76-134			
Surrogate: Toluene-d8	46.5		"	41.6		112	78-125			
Surrogate: 4-Bromofluorobenzene	76.2		"	72.6		105	77-127			

LCS (EC13110-BS1)

Prepared & Analyzed: 31-Mar-21

Benzene	13	3.2	ug/m3	13.0		102	69-119			
Toluene	16	3.8	"	15.4		102	66-119			
Ethylbenzene	20	4.4	"	17.7		111	70-124			
m,p-Xylene	19	8.8	"	17.7		105	61-134			
o-Xylene	19	4.4	"	17.7		107	67-125			

Surrogate: 1,2-Dichloroethane-d4	35.1		"	42.7		82.2	76-134			
Surrogate: Toluene-d8	44.7		"	41.6		108	78-125			
Surrogate: 4-Bromofluorobenzene	79.9		"	72.6		110	77-127			

LCS Dup (EC13110-BSD1)

Prepared & Analyzed: 31-Mar-21

Benzene	13	3.2	ug/m3	13.0		104	69-119	1.70	25	
Toluene	16	3.8	"	15.4		102	66-119	0.00	25	
Ethylbenzene	20	4.4	"	17.7		110	70-124	0.673	25	
m,p-Xylene	18	8.8	"	17.7		104	61-134	0.948	25	
o-Xylene	19	4.4	"	17.7		105	67-125	1.17	25	

Surrogate: 1,2-Dichloroethane-d4	35.5		"	42.7		83.2	76-134			
Surrogate: Toluene-d8	45.1		"	41.6		109	78-125			
Surrogate: 4-Bromofluorobenzene	79.6		"	72.6		110	77-127			

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Petroleum Hydrocarbon Analysis by EPA TO-15 - Quality Control
H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EC13110 - TO-15

Blank (EC13110-BLK1)

Prepared & Analyzed: 31-Mar-21

TPHv (C6 - C10)	ND	100	ug/m3
TPHv (C6) Aliphatics	ND	100	"
TPHv (C7 - C8) aliphatics	ND	100	"
TPHv (C9 - C10) aliphatics	ND	100	"
TPHv (C9 - C10) alkyl benzenes	ND	100	"

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Notes and Definitions

LCC Leak Check Compound
ND Analyte NOT DETECTED at or above the reporting limit
MDL Method Detection Limit
%REC Percent Recovery
RPD Relative Percent Difference

All soil results are reported in wet weight.

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs through PJLA, accreditation number 69070 for EPA Method TO-15, EPA Method 8260B and H&P 8260SV.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743 & 2745.

H&P is approved by the State of Louisiana Department of Environmental Quality under the National Environmental Laboratory Accreditation Conference (NELAC) certification number 04138

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpimg.com/about/certifications.

Lab Client and Project Information	
Lab Client/Consultant: <u>TERRACON</u>	Project Name / #: <u>61197153</u>
Lab Client Project Manager: <u>CURT STRIPEIKA</u>	Project Location: <u>LAYTON, UTAH</u>
Lab Client Address: <u>6949 S. HIGH TECH DR</u>	Report E-Mail(s): <u>CURT.STRIPEIKA@TERRACON.COM</u>
Lab Client City, State, Zip: <u>MIDVALE, UT 84047</u>	
Phone Number: <u>801.520.5029</u>	

Reporting Requirements	Turnaround Time	Sampler Information
<input checked="" type="checkbox"/> Standard Report <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/> Excel EDD <input type="checkbox"/> Other EDD: _____ <input type="checkbox"/> CA Geotracker Global ID: _____	<input checked="" type="checkbox"/> Standard (7 days for preliminary report, 10 days for final report) <input type="checkbox"/> Rush (specify): _____	Sampler(s): <u>ROY McDONALD</u> Signature: <u>[Signature]</u> Date: <u>3/18/21</u>

Sample Receipt (Lab Use Only)	
Date Rec'd: <u>3/23/21</u>	Control #: <u>210165.01</u>
H&P Project # <u>TER032321-18</u>	
Lab Work Order # <u>E103077</u>	
Sample Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Notes Below	
Receipt Gauge ID: <u>60206</u>	Temp: <u>RT</u>
Outside Lab:	
Receipt Notes/Tracking #: <u>1293TT619050122852</u>	
Lab PM Initials: <u>UB</u>	

Additional Instructions to Laboratory:								* Preferred VOC units (please choose one): <input type="checkbox"/> µg/L <input checked="" type="checkbox"/> µg/m ³ <input checked="" type="checkbox"/> ppbv <input type="checkbox"/> ppmv <u>Utah APL Ranges - 3/23/21</u>															
SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List <input type="checkbox"/> 8260SV <input type="checkbox"/> TO-15	VOCs Short List / Project List <input type="checkbox"/> 8260SV <input checked="" type="checkbox"/> TO-15 EX	Oxygenates <input type="checkbox"/> 8260SV <input type="checkbox"/> TO-15	Naphthalene <input type="checkbox"/> 8260SV <input checked="" type="checkbox"/> TO-15	TPHv as Gas <input type="checkbox"/> 8260SVm <input checked="" type="checkbox"/> TO-15m	Aromatic/Aliphatic Fractions <input type="checkbox"/> 8260SVm <input checked="" type="checkbox"/> TO-15m	Leak Check Compound <input type="checkbox"/> DFA <input type="checkbox"/> IPA <input type="checkbox"/> He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 <input type="checkbox"/> CO2 <input type="checkbox"/> O2 <input type="checkbox"/> N2							
SSVMP-7		3/18/21	0930	SS	400ml	379	-4.43		X		X		X										
SSVMP-1B		3/18/21	1330	SS	400ml	368	-5.10		X				X										
SSVMP-3B		3/18/21	1426	SS	400ml	376	-4.81		X				X										
SSVMP-6B		3/18/21	1704	SS	400ml	098	-5.62		X				X										
SSVMP-4B		3/19/21	0949	SS	400ml	121	-3.92		X				X										
SSVMP-5B		3/19/21	1857	SS	400ml	358	-4.31		X				X										
SSVMP-2B		3/19/21	1402	SS	400ml	369	-4.55		X				X										
Approved/Relinquished by: <u>[Signature]</u> Company: <u>TERRACON</u> Date: <u>3/19/21</u> Time: <u>1600</u>								Received by: <u>[Signature]</u> Company: <u>H&P</u> Date: <u>3/23/21</u> Time: <u>130pm</u>															
Approved/Relinquished by: _____ Company: _____ Date: _____ Time: _____								Received by: _____ Company: _____ Date: _____ Time: _____															
Approved/Relinquished by: _____ Company: _____ Date: _____ Time: _____								Received by: _____ Company: _____ Date: _____ Time: _____															